Willie John Padilla

List of Publications by Citations

147 papers	28,825 citations	57 h-index	169 g-index
196 ext. papers	34,240 ext. citations	7.9 avg, IF	7.14 L-index

#	Paper	IF	Citations
147	Composite medium with simultaneously negative permeability and permittivity. *Physical Review Letters*, **2000**, 84, 4184-7	7.4	5996
146	Perfect metamaterial absorber. *Physical Review Letters*, **2008**, 100, 207402	7.4	4042
145	Active terahertz metamaterial devices. *Nature*, **2006**, 444, 597-600	50.4	1584
144	Terahertz magnetic response from artificial materials. *Science*, **2004**, 303, 1494-6	33.3	1170
143	Metamaterial electromagnetic wave absorbers. *Advanced Materials*, **2012**, 24, OP98-120, OP181	24	1071
142	Taming the blackbody with infrared metamaterials as selective thermal emitters. *Physical Review Letters*, **2011**, 107, 045901	7.4	996
141	A metamaterial absorber for the terahertz regime: design, fabrication and characterization. *Optics Express*, **2008**, 16, 7181-8	3.3	991
140	High performance optical absorber based on a plasmonic metamaterial. *Applied Physics Letters*, **2010**, 96, 251104	3.4	907
139	Infrared spatial and frequency selective metamaterial with near-unity absorbance. *Physical Review Letters*, **2010**, 104, 207403	7.4	805
138	A metamaterial solid-state terahertz phase modulator. *Nature Photonics*, **2009**, 3, 148-151	33.9	679
137	Experimental demonstration of frequency-agile terahertz metamaterials. *Nature Photonics*, **2008**, 2, 295-298	33.9	620
136	Highly flexible wide angle of incidence terahertz metamaterial absorber: Design, fabrication, and characterization. *Physical Review B*, **2008**, 78,	3.3	620
135	Dynamical electric and magnetic metamaterial response at terahertz frequencies. *Physical Review Letters*, **2006**, 96, 107401	7.4	616
134	Flexible thin-film black gold membranes with ultrabroadband plasmonic nanofocusing for efficient solar vapour generation. *Nature Communications*, **2015**, 6, 10103	17.4	571
133	Design, theory, and measurement of a polarization-insensitive absorber for terahertz imaging. *Physical Review B*, **2009**, 79,	3.3	549
132	Terahertz compressive imaging with metamaterial spatial light modulators. *Nature Photonics*, **2014**, 8, 605-609	33.9	475
131	Liquid crystal tunable metamaterial absorber. *Physical Review Letters*, **2013**, 110, 177403	7.4	379

130	Reconfigurable terahertz metamaterials. *Physical Review Letters*, **2009**, 103, 147401	7.4	354
129	A dual band terahertz metamaterial absorber. *Journal Physics D: Applied Physics*, **2010**, 43, 225102	3	353
128	Electrically resonant terahertz metamaterials: Theoretical and experimental investigations. *Physical Review B*, **2007**, 75,	3.3	264
127	Complementary planar terahertz metamaterials. *Optics Express*, **2007**, 15, 1084-95	3.3	247
126	Negative refractive index metamaterials. *Materials Today*, **2006**, 9, 28-35	21.8	239
125	Liquid Crystal Metamaterial Absorber Spatial Light Modulator for THz Applications. *Advanced Optical Materials*, **2014**, 2, 275-279	8.1	219
124	THz Wave Modulators: A Brief Review on Different Modulation Techniques. *Journal of Infrared, Millimeter, and Terahertz Waves*, **2013**, 34, 1-27	2.2	212
123	Ultrafast optical switching of terahertz metamaterials fabricated on ErAs/GaAs nanoisland superlattices. *Optics Letters*, **2007**, 32, 1620-2	3	210
122	Experimental realization of a terahertz all-dielectric metasurface absorber. *Optics Express*, **2017**, 25, 191-201	3.3	197
121	Terahertz plasmonic high pass filter. *Applied Physics Letters*, **2003**, 83, 201-203	3.4	167
120	High speed terahertz modulation from metamaterials with embedded high electron mobility transistors. *Optics Express*, **2011**, 19, 9968-75	3.3	150
119	All-dielectric metasurface absorbers for uncooled terahertz imaging. *Optica*, **2017**, 4, 601	8.6	140
118	Terahertz single pixel imaging with an optically controlled dynamic spatial light modulator. *Optics Express*, **2013**, 21, 12507-18	3.3	135
117	Deep learning for accelerated all-dielectric metasurface design. *Optics Express*, **2019**, 27, 27523-27535	3.3	134
116	Performance enhancement of terahertz metamaterials on ultrathin substrates for sensing applications. *Applied Physics Letters*, **2010**, 97, 261909	3.4	119
115	Terahertz metamaterials on free-standing highly-flexible polyimide substrates. *Journal Physics D: Applied Physics*, **2008**, 41, 232004	3	118
114	Dynamic electromagnetic metamaterials. *Materials Today*, **2015**, 18, 39-50	21.8	117
113	Recent Progress in Electromagnetic Metamaterial Devices for Terahertz Applications. *IEEE Journal of Selected Topics in Quantum Electronics*, **2011**, 17, 92-101	3.8	113

112	Electrodynamics of the nodal metal state in weakly doped high-Tc cuprates. *Physical Review B*, **2005** , 72,	3.3	113
111	Planar wallpaper group metamaterials for novel terahertz applications. *Optics Express*, **2008**, 16, 18565-75	3.3	108
110	Microwave and terahertz wave sensing with metamaterials. *Optics Express*, **2011**, 19, 21620-6	3.3	107
109	Loop-wire medium for investigating plasmons at microwave frequencies. *Applied Physics Letters*, **1999**, 75, 1425-1427	3.4	107
108	Hybrid metamaterials enable fast electrical modulation of freely propagating terahertz waves. *Applied Physics Letters*, **2008**, 93, 091117	3.4	105
107	Constant effective mass across the phase diagram of high-Tc cuprates. *Physical Review B*, **2005**, 72,	3.3	98
106	Guiding light with conformal transformations. *Optics Express*, **2009**, 17, 14872-9	3.3	90
105	Dual-band planar electric metamaterial in the terahertz regime. *Optics Express*, **2008**, 16, 9746-52	3.3	86
104	Broadband optical antireflection enhancement by integrating antireflective nanoislands with silicon nanoconical-frustum arrays. *Advanced Materials*, **2011**, 23, 5796-800	24	82
103	Dynamic Manipulation of Infrared Radiation with MEMS Metamaterials. *Advanced Optical Materials*, **2013**, 1, 559-562	8.1	74
102	Group theoretical description of artificial electromagnetic metamaterials. *Optics Express*, **2007**, 15, 1639-46	3.3	74
101	Calculation and measurement of bianisotropy in a split ring resonator metamaterial. *Journal of Applied Physics*, **2006**, 100, 024507	2.5	70
100	Phototunable Dielectric HuygensTMetasurfaces. *Advanced Materials*, **2018**, 30, e1800278	24	69
99	Multifunctional metamaterial pyroelectric infrared detectors. *Optica*, **2017**, 4, 276	8.6	66
98	Liquid crystal programmable metasurface for terahertz beam steering. *Applied Physics Letters*, **2020** , 116, 131104	3.4	66
97	MEMS Based Structurally Tunable Metamaterials at Terahertz Frequencies. *Journal of Infrared, Millimeter, and Terahertz Waves*, **2011**, 32, 580-595	2.2	65
96	Four-Color Metamaterial Absorber THz Spatial Light Modulator. *Advanced Optical Materials*, **2013**, 1, 905-909	8.1	64
95	Thermochromic Infrared Metamaterials. *Advanced Materials*, **2016**, 28, 871-5	24	63

94	Plasmonic Resonance toward Terahertz Perfect Absorbers. *ACS Photonics*, **2014**, 1, 625-630	6.3	62
93	Extremely subwavelength planar magnetic metamaterials. *Physical Review B*, **2012**, 85,	3.3	60
92	Dynamic bound states in the continuum. *Optica*, **2019**, 6, 169	8.6	60
91	Metamaterials on parylene thin film substrates: Design, fabrication, and characterization at terahertz frequency. *Applied Physics Letters*, **2010**, 96, 011906	3.4	58
90	A dual-resonant terahertz metamaterial based on single-particle electric-field-coupled resonators. *Applied Physics Letters*, **2008**, 93, 191110	3.4	57
89	Experimental realization of a metamaterial detector focal plane array. *Physical Review Letters*, **2012** , 109, 177401	7.4	55
88	Reconfigurable room temperature metamaterial infrared emitter. *Optica*, **2017**, 4, 430	8.6	54
87	Broadband light-trapping enhancement in an ultrathin film a-Si absorber using whispering gallery modes and guided wave modes with dielectric surface-textured structures. *Advanced Materials*, **2013**, 25, 2617-23	24	54
86	Broadband and ultrahigh optical haze thin films with self-aggregated alumina nanowire bundles for photovoltaic applications. *Energy and Environmental Science*, **2015**, 8, 2650-2656	35.4	52
85	Ultrathin tunable terahertz absorber based on MEMS-driven metamaterial. *Microsystems and Nanoengineering*, **2017**, 3, 17033	7.7	51
84	Spin-induced optical conductivity in the spin-liquid candidate herbertsmithite. *Physical Review Letters*, **2013**, 111, 127401	7.4	49
83	Infrared probe of the anomalous magnetotransport of highly oriented pyrolytic graphite in the extreme quantum limit. *Physical Review B*, **2006**, 74,	3.3	48
82	Spectroscopy of metamaterials from infrared to optical frequencies. *Journal of the Optical Society of America B: Optical Physics*, **2006**, 23, 404	1.7	48
81	Searching for the Slater transition in the pyrochlore Cd2Os2O7 with infrared spectroscopy. *Physical Review B*, **2002**, 66,	3.3	47
80	Ultra-thin infrared metamaterial detector for multicolor imaging applications. *Optics Express*, **2017**, 25, 23343-23355	3.3	45
79	Degenerate critical coupling in all-dielectric metasurface absorbers. *Optics Express*, **2017**, 25, 24658-24669	3.3	42
78	Stable high temperature metamaterial emitters for thermophotovoltaic applications. *Applied Physics Letters*, **2014**, 104, 201113	3.4	40
77	Electromagnetic characterization of planar metamaterials by oblique angle spectroscopic measurements. *Physical Review B*, **2007**, 75,	3.3	40

76	Role of surface electromagnetic waves in metamaterial absorbers. *Optics Express*, **2016**, 24, 6783-92	3.3	40
75	Towards a two-dimensional superconducting state of La(2-x)Sr(x)CuO4 in a moderate external magnetic field. *Physical Review Letters*, **2010**, 104, 157002	7.4	39
74	Surface-wave-assisted nonreciprocity in spatio-temporally modulated metasurfaces. *Nature Communications*, **2020**, 11, 1469	17.4	38
73	Large-area metamaterials on thin membranes for multilayer and curved applications at terahertz and higher frequencies. *Applied Physics Letters*, **2009**, 94, 161113	3.4	37
72	Infrared signatures of hole and spin stripes in La2SrxCuO4. *Physical Review B*, **2005**, 72,	3.3	31
71	Metamaterial Electromagnetic Wave Absorbers (Adv. Mater. 23/2012). *Advanced Materials*, **2012**, 24, OP181-OP181	24	30
70	Tunable Meta-Liquid Crystals. *Advanced Materials*, **2016**, 28, 1553-8	24	29
69	Graphene metamaterial spatial light modulator for infrared single pixel imaging. *Optics Express*, **2017**, 25, 25318-25325	3.3	24
68	Properties of Planar Electric Metamaterials for Novel TeraHertz Applications. *Journal of Nanoelectronics and Optoelectronics*, **2007**, 2, 90-95	1.3	24
67	Bi-layer metamaterials as fully functional near-perfect infrared absorbers. *Applied Physics Letters*, **2015**, 107, 021107	3.4	22
66	A Zero-Rank, Maximum Nullity Perfect Electromagnetic Wave Absorber. *Advanced Optical Materials*, **2019**, 7, 1801632	8.1	21
65	Role of loss in all-dielectric metasurfaces. *Optics Express*, **2018**, 26, 17669-17679	3.3	20
64	Controlling Gigahertz and Terahertz Surface Electromagnetic Waves with Metamaterial Resonators. *Physical Review X*, **2011**, 1,	9.1	20
63	Broadband multi-interferometer spectroscopy in high magnetic fields: From THz to visible. *Review of Scientific Instruments*, **2004**, 75, 4710-4717	1.7	20
62	Multiple Epsilon-Near-Zero Resonances in Multilayered Cadmium Oxide: Designing Metamaterial-Like Optical Properties in Monolithic Materials. *ACS Photonics*, **2019**, 6, 1139-1145	6.3	19
61	Extreme subwavelength electric GHz metamaterials. *Journal of Applied Physics*, **2011**, 110, 054906	2.5	19
60	Graphene metamaterial modulator for free-space thermal radiation. *Optics Express*, **2016**, 24, 25189-25201	3.3	19
59	Single-layer terahertz metamaterials with bulk optical constants. *Physical Review B*, **2012**, 85,	3.3	18

58	Loss compensation in metamaterials through embedding of active transistor based negative differential resistance circuits. *Optics Express*, **2012**, 20, 22406-11	3.3	17
57	A Subwavelength Extraordinary-Optical-Transmission Channel in Babinet Metamaterials. *Advanced Optical Materials*, **2013**, 1, 221-226	8.1	16
56	Interlayer electrodynamics and unconventional vortex state in YBa2Cu3Oy. *Physical Review B*, **2007**, 76,	3.3	16
55	Neural-adjoint method for the inverse design of all-dielectric metasurfaces. *Optics Express*, **2021**, 29, 7526-7534	3.3	16
54	Frequency-division-multiplexed single-pixel imaging with metamaterials. *Optica*, **2016**, 3, 133	8.6	15
53	Single Pixel Quadrature Imaging with Metamaterials. *Advanced Optical Materials*, **2016**, 4, 66-69	8.1	15
52	Post-processing approach for tuning multi-layered metamaterials. *Applied Physics Letters*, **2014**, 105, 151102	3.4	14
51	Magnetic levitation of metamaterial bodies enhanced with magnetostatic surface resonances. *Physical Review B*, **2012**, 85,	3.3	14
50	Subterahertz spectroscopy at He-3 temperatures. *Review of Scientific Instruments*, **2003**, 74, 4703-4710	1.7	14
49	Deep Learning the Electromagnetic Properties of Metamaterials—A Comprehensive Review. *Advanced Functional Materials*, **2021**, 31, 2101748	15.6	14
48	External modulators for TeraHertz Quantum Cascade Lasers based on electrically-driven active metamaterials. *Metamaterials*, **2010**, 4, 83-88		13
47	A Triple-Mode Midinfrared Modulator for Radiative Heat Management of Objects with Various Emissivity. *Nano Letters*, **2021**, 21, 4106-4114	11.5	13
46	Strong Broadband Terahertz Optical Activity through Control of the Blaschke Phase with Chiral Metasurfaces. *Physical Review Applied*, **2017**, 8,	4.3	12
45	Magnetic field induced modification of superfluid density and interplane spectral weight in YBa2Cu3Oy. *Physical Review B*, **2009**, 79,	3.3	11
44	Sum rules and interlayer infrared response of the high temperature YBa2Cu3Oy superconductor in an external magnetic field. *Physical Review Letters*, **2008**, 101, 097008	7.4	11
43	Superiority of terahertz over infrared transmission through bandages and burn wound ointments. *Applied Physics Letters*, **2016**, 108, 233701	3.4	11
42	Imaging with metamaterials. *Nature Reviews Physics*, **2022**, 4, 85-100	23.6	10
41	Perfect electromagnetic absorbers from microwave to optical. *SPIE Newsroom*,		10

40	Terahertz plasmonic composites. *Physical Review E*, **2007**, 75, 036614	2.4	9
39	Percolation and polaritonic effects in periodic planar nanostructures evolving from holes to islands. *Applied Physics Letters*, **2010**, 97, 041901	3.4	8
38	Strong-coupling effects in cuprate high-Tc superconductors by magneto-optical studies. *Physical Review B*, **2005**, 72,	3.3	8
37	Infrared all-dielectric Kerker metasurfaces. *Optics Express*, **2021**, 29, 10518-10526	3.3	8
36	Interferometric direction finding with a metamaterial detector. *Applied Physics Letters*, **2013**, 103, 254103	3.4	7
35	Possibility of magnetic-field-induced reconstruction of the Fermi surface in underdoped cuprates: Constraints from infrared magneto-optics. *Physical Review B*, **2010**, 81,	3.3	7
34	Properties of dynamical electromagnetic metamaterials. *Journal of Optics (United Kingdom)*, **2017**, 19, 084003	1.7	6
33	Plasmonic waveguides and metamaterial components at terahertz frequencies **2009**,		5
32	Flexible terahertz metamaterials: towards a terahertz metamaterial invisible cloak **2008**,		5
31	Ferromagnetic resonance in double perovskite Ba2FeMoO6. *Journal of Magnetism and Magnetic Materials*, **2003**, 254-255, 583-585	2.8	5
30	Embedded HEMT/metamaterial composite devices for active terahertz modulation **2010**,		4
29	Resonance-domain diffractive lens for the terahertz region. *Optics Letters*, **2018**, 43, 2384-2387	3	3
28	Terahertz metamaterial devices **2007**,		3
27	Infrared spectroscopy and ellipsometry of magnetic metamaterials **2005**,		3
26	Strain Sensing with Metamaterial Composites. *Advanced Optical Materials*, **2019**, 7, 1801397	8.1	2
25	Electronic and thermally tunable infrared metamaterial absorbers **2016**,		2
24	Metamaterial-based imaging for potential security applications **2013**,		2
23	Dynamical electric and magnetic metamaterial response at terahertz frequencies **2006**,		2

22	Temporal coupled mode theory for all-dielectric perfect absorbers **2018**,		2
21	Learning the Physics of All-Dielectric Metamaterials with Deep Lorentz Neural Networks. *Advanced Optical Materials*,2200097	8.1	2
20	Taming blackbody radiation with MEMS metamaterials **2015**,		1
19	Artificial electrochromic & thermochromic infrared metamaterials **2015**,		1
18	Terahertz metamaterials **2009**,		1
17	Terahertz Metamaterials with Simultaneously Negative Electric and Magnetic Resonance Responses based on Bimaterial Pop Up Structures **2009**,		1
16	Flexible and reconfigurable terahertz metamaterials **2009**,		1
15	Dual-band planar electric thz metamaterial with resonator yield analysis **2008**,		1
14	Active Terahertz Metamaterial Devices **2008**,		1
13	Terahertz metamaterials for active, tunable, and dynamic devices **2007**,		1
12	Dynamical Metamaterials at Terahertz Frequencies **2006**,		1
11	Light Matter Interactions **2011**, 3-37		1
10	Split-Ring Resonator Enhanced Terahertz Antenna **2007**,		1
9	Preface to Special Topic: Frontiers on THz photonic devices. *APL Photonics*, **2018**, 3, 051501	5.2	1
8	Ultrathin Metasurface Wavelength-Selective Mirror for Millimeter/Terahertz Wave Fabry-Perot Cavities. *Journal of Infrared, Millimeter, and Terahertz Waves*, **2020**, 41, 365-374	2.2	0
7	Elimination of phase singularity to achieve superresolution in lossy metamaterials. *Optics Express*, **2010**, 18, 12269-76	3.3	0
6	Fabrication of Metamaterial Perfect Absorbers **2022**, 93-123		0
5	Metamaterial Perfect Absorbers and Performance **2022**, 29-91		0

4 Multiplexed coded time domain sampling with metamaterials. *Optics Express*, **2017**, 25, 25797-25808 3.3

3 Metamaterial Electromagnetic Wave Absorbers **2022**, 3, 1-199

2 Theory of Perfect Absorbers **2022**, 7-27

1 Dynamic Metamaterial Absorbers **2022**, 125-155